1100-12-57 **Wei Li*** (liwei@mmrc.iss.ac.cn), Academy of Mathematics and Systems Science, Chinese Academy of Sciences, No.55 Zhongguancun East Road, Beijing, 100190, Peoples Rep of China.
Sparse Difference Resultant and Difference Chow Form.

In this talk, we first define the sparse difference resultant for a Laurent transformally essential system and then discuss its basic properties by comparing with its differential counterpart. We also propose an algorithm to compute the sparse difference resultant. The algorithm is single exponential in terms of the Jacobi number, the number of variables, and the size of the Laurent system.

Besides, we present an intersection theory for generic difference polynomials. We show that the intersection of an irreducible difference variety of dimension $d > 0$ and order h with a generic difference hypersurface of order s is an irreducible difference variety of dimension $d-1$ and order $h+s$. Based on the intersection theory, we define the difference Chow form for an irreducible difference variety and give its basic properties.

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